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ABSTRACT

The financial well-being of farmers varies with the local economy's dependence on farming. Farming-dependent counties (where farming contributes at least 20 percent of the county's total earnings in 1980-84), offer limited nonfarm employment opportunities. These operators earn high farm incomes but face large debts. Declining land values have lowered their equity positions. Government payments provide a larger share of their incomes than for farms in other areas because these farmers specialize in producing crops included in farm commodity programs. Farms in counties not so dependent on agriculture are smaller, produce a greater quantity and variety of crops, rely less on farming for income, and have better equity positions. Average farmland values in these counties are higher because farming competes with other business, residential, and recreational land uses. A change in government agricultural policy, especially in the direction of overall reduction in payments or direct payments to low-income farmers, would have a great negative impact on farm-dependent counties. (KC)

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Farming-Dependent Counties and the Financial Well-Being of Farm Operator Households

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The financial well-being of farmers varies with the local economy's dependence on farming. Farming-dependent counties (where farming contributes at least 20 percent of the county's total earnings in 1980-84, the most recent data available at the time of the study) offer limited nonfarm employment opportunities. These operators earn high farm incomes but face large debts. Declining land values have lowered their equity positions. Government payments provide a larger share of their incomes than for farms in other areas because these farmers specialize in producing crops included in farm commodity programs. Farms in counties not so dependent on agriculture are smaller, produce a greater quantity and variety of crops, rely less on farming for income, and have better equity positions. Average farmland values there are higher because farming competes with other business, residential, and recreational land uses. This report examines the financial well-being of farm operator households in counties that rely most heavily on farming for earnings.

There are 514 farming-dependent counties in the contiguous United States where farming constituted at least 20 percent of total labor and proprietor income during 1980-84 (see box on County Types). These counties are likely to be the most affected by changing financial conditions in the farm sector because they produce commodities, such as cash grains, most susceptible to fluctuations in international trade. These counties also have been most affected by the longrun trend toward fewer and larger farms. As U.S. farming has become a more capital-intensive industry, employment in farming declined in both absolute and relative terms. Population had declined in counties dependent on farming because substantial off-farm employment opportunities were not available. Many farming-dependent counties have not participated in the diversification of America's rural economy that occurred in the 1960's and early 1970's. As a result, they have a unique economic personality while, at the same time, they represent a remnant of rural America of the past.

This report describes the general characteristics of areas that differ by their dependence on farming as an economic base and examines the financial conditions of farms in those areas. We examine the association between farm financial well-being and the structure of the local economy. We do not investigate causal relationships in this report. Rather, we suggest that the two affect each other. For example, since farm households and businesses are also consumers and taxpayers in their local communities, the more a county depends on agricultural income, the more the local economy will be affected by conditions in the farm sector. Similarly, county characteristics affect farm businesses and households through land values, off-farm employment, and type of farm specialty.

Expectations about the ability of the land to generate income affects land values. Land values in counties dominated by farming activities are much more sensitive to expectations about farm income than are land values in other counties. In counties dominated by nonfarm industries, competition from alternative users of farmland will lessen declines in, or actually stabilize or increase, farmland values, thus strengthening the equity position of farmers (equity measures net worth, the hypothetical balance that would remain from the sale of assets and paying-off existing debt). Falling farmland values were a major factor contributing to the financial stress of many farms in the early 1980's.

Farmers outside farming-dependent areas also experience financial difficulties. High debt loads; changing interest rates, weather, and prices; and other

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factors affect the financial situation of all farmers, regardless of location. But without the offsetting influence of a large nonfarm sector to lessen changes in land values, financial stress is likely to be greater in farming-dependent counties.

Off-farm incomes are important for sustaining many farm households. The larger and more diverse the nonfarm sector in the local economy, the more likely that members of farm households will obtain nonfarm employment to help maintain household income and maintain the farm business. The availability of off-farm jobs also affects farm structure. As is pointed out later, counties less dependent on farming have a higher proportion of small farms. The influence of off-farm work is highest among operators of small farms.

Some farm households are including specialty crops in their farm enterprises to maintain farm income. With a larger nonfarm sector, farmers may find local marketing niches, such as for fresh vegetables, with good chances for success.

County Types

These definitions are based on data compiled by the Bureau of Economic Analysis, U.S. Department of Commerce. These definitions are calculated using farm labor and proprietor income. Farm labor and proprietor income includes the net earnings of farm operators (proprietors) plus wages paid to people employed on farms. Total county labor and proprietor income (LPI) includes the earnings of all proprietorship businesses in the county plus wages paid to all private and public sector employees working in the county. Labor and proprietor income also includes nonwage but work-related income items, such as employer contributions to life and health insurance.

Farming-dependent counties. 514 counties where farming contributed at least 20 percent of the county's LPI in 1980-84. Note that this concept does not include the income associated with agricultural input and processing industries.

Farming-important counties. 540 counties where farming contributed 10-19 percent of the county's LPI.

Not-farming-dependent counties. 2,015 counties where farming accounted for up to 10 percent of LPI. Economic activity such as manufacturing, mining, and services contributed more than 90 percent of LPI during 1980-84. Some of these counties contain major cities or urban areas that serve as trade centers for multicounty regions. Because this is the largest group of counties, farming in these counties represents a significant share of U.S. agricultural production.

The method we used to identify farming-dependent counties was adopted from that used in Hoppe and Bender and others (see References). Bender and others reported 702 counties where farming constituted at least 20 percent of total LPI. The decline in the number of farming-dependent counties resulted from updating the data from 1975-79 to 1980-84. This change occurred because farm income in some counties declined relative to nonfarm income. This does not necessarily mean, however, that the absolute level of farm income declined in these counties. For example, Trempealeau County, Wisconsin, was a farming-dependent county in 1974-79 because slightly more than 23 percent of LPI came from farming. For 1980-84, the percentage of LPI from farming declined to under 20 percent, and Trempealeau County was no longer classsified as farming-dependent. Cases like this prompted us to develop a second category of counties, called farming-important, in which farming accounted for 10-19 percent of LPI. In contrast to Hoppe and Bender and others, we retained the metro counties in our analysis because a few have at least 20 percent of total LPI from farming. Only 9 of the 514 farming-dependent counties in this report were metro counties during 1980-84. The 1980-84 period was the latest period for which county level data were available when the study was undertaken. While the farm sector was experiencing substantial financial stress during this period, it was not a period of low nominal income, *per se*. Income remained a valid measure of the relative importance of farming during 1980-84 for county classification.

Characteristics of County Types

We classified the 3,069 counties in the contiguous United States into farming-dependent, farming-important, and not-farming-dependent county types.

Farming-Dependent Counties

There are 514 farming-dependent counties as of 1980-84. These counties are not necessarily the largest producers of U.S. agricultural commodities. Instead, farming represents a major economic base in the county. These counties are primarily in the Plains States and western Corn Belt (fig. 1).

About 2 percent of the U.S. population lives in these counties (table 1). Population increased only slightly, on average, in these counties during the 1970's and early 1980's. The average population of farming-dependent counties was just under 10,000 residents in 1985. Average total employment of farming-dependent counties increased during 1970-84, but remained under 5,000 in 1984.

Most of the land (80 percent) in farming-dependent counties is used for farming. Farming-dependent counties had an especially high average level of per capita income in 1984, which is consistent with the record-high net farm income of that year relative to earlier years. In 1970 and 1980, per capita incomes were also above the national average.

Total earnings of farming-dependent counties in 1984 averaged $59 million, over half provided by goods-producing industries (including farming). Farming provided the largest source of earnings in farming-dependent counties (35.1 percent of total earnings), while manufacturing earnings were comparatively low (8.6 percent). Earnings from the service industries were concentrated in wholesale and retail trade and government.

Farming-Important Counties

There are 540 farming-important counties, mostly scattered across the South, Midwest, and Northwest. Most are contiguous to farming-dependent counties (fig. 1).

Figure 1
Local dependence on farming

Farming-dependent counties: Farming generated at least 20 percent of the county's total earnings

Farming-important counties: Farming generated 10-19 percent of the county's total earnings

Not-farming-dependent counties: Farming generated up to 10 percent of the county's total earnings

Farming-important counties contain about 5 percent of the U.S. population (table 1).

Population in these counties rose during 1970-85, especially during the 1970's. Total employment in farming-important counties also increased to an average of 9,209 in 1984. And while farming-important counties had, on average, twice the population and employment of farming-dependent counties, farms contained a substantial share (65 percent) of the land area.

Manufacturing earnings were more important than farm earnings in farming-important counties. Farm earnings accounted for 15.4 percent of total earnings in farming-important counties, under half that of farming-dependent counties. Earnings from the goods-producing industries accounted for less than half of total county earnings in 1984. The share of earnings from the service industries approximated the U.S. county average of 56.9 percent.

Not-Farming-Dependent Counties

Farming-dependent and farming-important counties are much less populated than the not-farming-dependent counties because about a third of the not-farming-dependent counties are in metro areas. The land area in farms in these counties accounted for only 49 percent of the total county land area.

Table 1—Selected characteristics of farming-dependent, farming-important, and not-farming-dependent counties[1]

Item	Farming-dependent	Farming-important	Not-farming-dependent	All
		Number		
Total counties, 1980-84 average	514	540	2,015	3,069
Metro	9	42	661	712
Nonmetro	505	498	1,354	2,357
		Percent		
Average land area in farms, 1982	80	65	49	54
Average population:		*Number*		
1970	9,073	17,958	93,222	65,905
1980	9,720	20,759	103,697	73,383
1985	9,957	21,861	109,286	77,290
Average population density,		*Persons per square mile*		
1980	14.5	30.6	283.7	194.1
Average per capita income:		*Dollars*		
1970	3,195	2,837	3,179	3,122
1980	7,901	7,111	8,080	7,879
1984	11,182	9,787	10,791	10,680
Average total employment:		*Number*		
1970	3,730	7,167	41,317	29,013
1980	4,295	8,854	51,362	36,000
1984	4,326	9,209	54,803	38,326
		1,000 dollars		
Average total earnings, 1984	59,070	125,466	1,013,543	697,427
County earnings by industry, 1984:		*Percent*		
Goods producing	51.7	43.6	40.8	43.1
Farming	35.1	15.4	3.4	10.6
Agricultural services	1.4	1.2	.6	.8
Mining	2.3	3.1	5.0	4.2
Construction	4.3	5.4	6.0	5.6
Manufacturing	8.6	18.5	25.9	21.7
Services	48.3	56.4	59.2	56.9
Transportation, public utilities	6.1	7.1	7.4	7.1
Wholesale/retail trade	12.9	14.6	14.4	14.2
Finance, insurance, and real estate	3.4	3.5	3.6	3.6
Other services	9.5	12.2	14.8	13.5
Government	16.4	19.1	19.0	18.6

[1]Excluding Alaska and Hawaii.

Per capita income is higher in not-farming-dependent counties than in farming-important counties (table 1). Earnings from farming account for only 3.4 percent of total earnings in not-farming-dependent counties. However, these areas generate about half of all farm earnings in the United States. Manufacturing earnings are a much more significant share of total earnings in not-farming-dependent counties, accounting for 25 percent. The service industries accounted for almost 60 percent of total earnings in not-farming-dependent counties in 1984, compared with 48.3 and 56.4 percent in the farming-dependent and farming-important counties, respectively. Average total earnings and employment in not-farming-dependent counties were much higher than in the other county types, reflecting the size and metro status of not-farming dependent counties.

A Look at Farms Within the County Types

Farm financial well-being varies by the dependence of the local economy on agriculture. Farms in the farming-dependent, farming-important, and not-farming-dependent counties differ in agricultural structure, production characteristics, income, wealth, and farm operator household characteristics. This section describes all farms in each county type (previous descriptions of county types focused on the "average" county). See box for a description of the data and definitions of income.

Farming-Dependent Counties

About 16 percent of farms in the contiguous United States were in farming-dependent areas in 1986

Income Definitions and Source of Farm Data

We used individual farm data from the 1986 Farm Costs and Returns Survey (FCRS) to measure farm financial conditions. The survey provided detailed information on farm assets, debts, income and expenses, off-farm income, age of the farm operator, and the number of people in the household. The FCRS covers the 48 contiguous States and is reliable at the U.S. and regional levels. The survey yielded 12,428 sample observations, representing 1.57 million farms.

Gross farm income. Gross farm income includes three major components: gross farm business, gross farm household, and gross Government payments incomes. Gross farm business income is derived from the production and sales of agricultural commodities and services, including the value of net Commodity Credit Corporation (CCC) loans. Participating in CCC loan programs is like selling certain commodities to the Government, but the farmer has the option to buy them back. Farmers generally buy back the commodities (repay the loan) if they can obtain a higher price for the commodities in the market within a specified time period. Gross farm household income is the rental value of the operator households' dwellings on farms, the value of the food they produce and consume, and the wages and salaries farm operator households pay to themselves. Gross Government payments income is the direct income farms receive from the Federal Government for participation in commodity, conservation, and disaster programs. Gross Government payments exclude the value of CCC loans. CCC loans and most direct Government payments are available only to producers of specified commodities. Cash grains and cotton farmers receive most of the benefits under these payment programs. Programs for dairy products, tobacco, peanuts, sugar, honey, mohair, and wool support prices in the marketplace without making direct payments to producers. The Government also administers other programs, such as marketing orders or tax provisions, that have different and indirect effects on farm income depending on type of commodity specialization. However, we analyzed only the direct Government payments to producers.

Net Income. There are three net income concepts used in this analysis: net cash farm income, net farm income, and net cash household income. Net cash farm income includes only the farm's cash income and expense items (including interest expenses). Net farm income includes the farm's cash and noncash income and expense items. Noncash income items include the gross rental value of farm dwellings, the value of commodities consumed at home, and the value of change in farm inventories. Noncash expense items include depreciation expenses and in-kind labor expenses. Net cash household income includes net cash farm income and cash off-farm income from all sources (such as nonfarm wages and salaries, interest, and dividends).

(table 2). These farms produced about 23 percent of the value of all U.S. agricultural commodities. Farms in farming-dependent areas were generally larger than farms in other areas in terms of both acreage and the gross value of agricultural sales. In 1986, 30 percent of the farms in these areas had gross sales valued over $100,000. Almost 26 percent of all such farms in the United States were in farming-dependent counties.

The specialization of farms as measured by the Standard Industrial Classification (SIC) system also varied by local dependence on farming. Farming-dependent areas had a larger proportion of cash grain farms (wheat, corn, rice, and soybeans) and cotton farms than did other areas. About 34 percent of the farms in farming-dependent areas were cash grain farms, compared with 21 percent nationwide. A lower proportion of farms (about 50 percent) in farming-dependent areas specialized in livestock production than did farms nationwide (almost 60 percent).

Farm operators in farming-dependent areas were more likely than those in other areas to be under 35 years old and less likely to be over 65 years old. They also were more likely to report farming as their major occupation. About half of the operator households in farming-dependent areas were linked to the nonfarm economy by someone in the household working in a nonfarm occupation.

The average gross farm business income and gross Government payments income were higher for farms in farming-dependent areas because these farms were generally larger, and both income sources are directly related to the volume of agricultural production. In addition, direct Government payments are established only for major grains and cotton and, as described above, farms in farming-dependent areas were more likely to specialize in these commodities than were other farms. As a percentage of total gross farm income, gross income from business sources was constant across county types, but income from Government programs was a larger percentage of the gross income of farms in farming-dependent areas than in other areas. About a third of all direct Government payments went to farmers in farming-dependent counties. Gross farm household income was less, on average, for farms in farming-dependent areas than in other areas. This is due to the lower rental values of farm dwellings reflecting generally lower per acre land values.

Table 2—Characteristics and income of farms by county types, 1986

Item	Farms in—			
	Farming-dependent counties	Farming-important counties	Not-farming-dependent counties	All counties
			Thousand	
Farms:				
Number	244	320	1,005	1,570
			Percent	
Percentage	16	20	64	100
Sales class of farm:				
Less than $40,000	43	61	71	65
$40,000-$99,999	27	18	14	17
$100,000-$249,999	22	15	10	13
$250,000 and over	8	7	4	5
Type of farm specialty:				
Cash grain	34	24	17	21
Cotton	2	1	*	1
Tobacco	3	4	4	4
Vegetables	*	1	2	1
Fruit, nuts	3	4	3	3
Nursery	*	*	2	1
Other crops	8	8	9	9
Beef, hogs, sheep	32	40	41	39
Dairy	11	12	10	10
Poultry	*	2	1	1
Other livestock	5	5	11	9
Farming as the operator's major occupation	76	64	55	60
Nonfarm job or business of household member	53	60	61	60

See notes at end of table.

Continued—

The average net farm income of farms in farming-dependent areas was $22,750 in 1986, and net cash farm income was $28,955, both substantially higher than in the other county types. About 27 percent of farms in farming-dependent areas had negative net farm income, and 26 percent had negative net cash farm income, both substantially lower than in the other county types.

The cash off-farm income of farm operator households in farming-dependent areas averaged $14,516 in 1986, the lowest of all areas. Their average net cash household income from farm and nonfarm sources was $43,470, the highest of the three county types. Twenty-three percent of the farm operator households in farming-dependent areas had negative net cash household incomes, somewhat less than in the other two county groups. This income situation reflects the contrasts of the farm financial situation today: farming is a risky business with a high chance of losing money in any one year.

The balance sheet of the average farm in farming-dependent areas shows that these farms were generally larger than those in other areas (table 3). Farm assets, debt, and net worth were greater, on average, than in other areas.

The value of land and buildings owned was a somewhat smaller share (61 percent) of the total farm assets in farming-dependent areas than in other areas. However, farms in farming-dependent areas also rented-in more farmland acreage in absolute terms (458 acres per farm) and as a percentage of the acreage operated (42 percent). This is not surprising, however, because large farms in all areas rent-in more acreage, and farms are generally larger in farming-dependent areas.

Although the debt load of farms in farming-dependent areas was greater, the distribution of debt by lender was similar across county types. Farms in farming-dependent areas generally were more highly leveraged than were farms in other areas. Only about 34 percent of farms in farming-dependent areas had no debt, compared with 43 percent nationwide. We examine the financial position of households through their debt/asset ratio. The debt/asset ratio measures both the proportion of owner equity in the farm and the financial risk exposure of the operation (the extent to which

Table 2—Characteristics and income of farms by county types, 1986—continued

Item	Farms in—			
	Farming-dependent counties	Farming-important counties	Not-farming-dependent counties	All counties
			Percent	
Farm operator's age:				
35 years and under	21	17	17	18
36-44	19	19	20	20
45-54	21	23	21	21
55-64	24	24	23	23
65 and older	15	16	19	18
Farms with negative:				
Net farm income	27	32	31	30
Net cash farm income	26	42	51	45
Total cash income	23	26	26	26
			Dollars per farm	
Gross farm income	124,762	94,560	68,748	82,730
Farm business	107,717	81,938	58,113	70,692
Farm household	5,965	6,427	7,408	6,983
Government payments	11,081	6,195	3,227	5,055
Total farm expenses	102,012	78,950	57,816	69,005
Net farm income	22,750	15,610	10,931	13,725
Net cash farm income	28,955	18,757	12,153	16,115
Off-farm income	14,516	21,158	26,360	23,456
Net cash household income of farms	43,470	39,915	38,514	39,571

Note: Percentages may not sum to 100 due to rounding.
* = Less than 1 percent.

the farm's assets have been borrowed against). It is calculated as total debt outstanding, divided by the farmer's estimate of the current market value of owned assets of the farm business (notice that this ratio does not consider the cash-flow of farms and, hence, their ability to meet debt obligations). A ratio of 0.40 is sometimes viewed as a critical break point. However, there is likely more agreement that a debt/asset ratio of 0.70 or above is a vulnerable financial position. About 11 percent of the farms in the farming-dependent areas had a debt/asset ratio of 0.70 or more, compared with 8 percent nationwide (table 3).

Farming-Important Counties

About 20 percent, or 320,000 farms, were in farming-important counties (table 2). Over 60 percent of farms in these areas were small, with sales less than $40,000. The proportion of small farms in farming-important counties was higher than in farming-dependent counties, but less than in the not-farming-dependent counties. Farming-important areas contain almost the same proportion of large farms (with sales of at least $250,000) as in farming-dependent areas. About 24 percent of the farms in farming-important counties are cash grain farms, but the largest specialty is beef, hog, or sheep farms/ranches.

Sixty-four percent of farm operators in the farming-important counties indicated farming as their major occupation in 1986. Sixty percent of the operator households contained a household member who worked in a nonfarm job or business.

The average gross farm income in farming-important areas was $94,560 in 1986, while the average net farm income was $15,610. Almost a third of farms in farming-important areas had negative net farm income. When only cash items are considered, the average net cash farm income was $18,757, which was 35 percent less than farms in farming-dependent counties. At $21,158, off-farm income per farm operator household was higher than in farming-dependent areas and lower than in not-farming-dependent areas.

The average farm in farming-important counties was 678 acres, smaller than in farming-dependent areas and larger than in not-farming-dependent counties (table 3). Farm assets were valued at $268,735 per farm, $176,012 of which were land and buildings. The average value of land and buildings per farm was lowest in farming-important areas. Farm debt averaged $71,755 per farm: 38 percent of farms in farming-important counties had no debt and, like farms in farming-dependent areas, 5 percent were insolvent.

Table 3—Assets and debt of farms by county type, 1986

Item	Farms in—			
	Farming-dependent counties	Farming-important counties	Not-farming-dependent counties	All counties
			Number per farm	
Acres operated	1,090	678	503	630
			Percent	
Acres rented-in	42	35	29	33
			Dollars	
Land and building value per acre owned	398	613	906	695
Assets:				
			Dollars per farm	
Land and buildings owned	205,237	176,012	193,790	191,946
Other assets	132,524	92,723	81,263	91,577
Total	337,761	268,735	275,053	283,523
Debt:				
Commercial banks	26,896	23,937	14,630	18,437
Farm credit system	23,661	20,675	13,811	16,744
Farmers Home Administration	14,150	11,682	6,866	8,962
Other	18,782	15,461	12,589	14,139
Total	83,488	71,755	47,897	58,302
Net worth	254,272	196,980	227,156	225,221
Debt/asset ratio:			*Percent*	
No debt	34	38	47	43
Less than 0.40	39	38	36	37
0.40-0.69	16	14	10	12
0.70-0.99	6	5	4	4
Insolvent	5	5	3	4

Not-Farming-Dependent Counties

Most U.S. farms (64 percent) were located where farming is not a significantly large part of the local economy (table 2). They include many households that operate small farms and are more dependent on off-farm income than on farm income. Over 70 percent of these farms had sales of $40,000 or less in 1986. Only 4 percent of farms in not-farming-dependent counties had at least $250,000 in sales, only about half the proportion of such farms in farming-dependent areas. Farms in not-farming-dependent counties accounted for half of all commodity sales in 1986, though they contributed only a small share of the county's earnings. About 63 percent of farms in not-farming-dependent counties were livestock farms. Twice the proportion of farms were general or miscellaneous livestock farms in not-farming-dependent areas than in other areas.

Operators at least 65 years old operated almost 20 percent of the farms. A higher proportion (45 percent) of farms in these areas were operated by persons whose major occupation was not farming; even more contained a household member working in a nonfarm occupation.

The average gross income of farms in not-farming-dependent areas, $68,748, was the lowest of the three county types. A larger share came from gross imputed farm household income than in the other areas. Farms in not-farming-dependent areas had the smallest proportion of gross farm business income and direct Government payments. Not-farming-dependent areas had the lowest net incomes from farming and the highest share of farms with negative net cash farm income. But, these counties had the highest off-farm income ($26,360) per farm operator household. Their average off-farm income was almost as high as the national U.S. average of $30,759, and higher than the average nonmetro income from all sources of $23,821. The average net cash household income of farm operator households in not-farming-dependent areas was $38,514, almost $5,000 less than the average in farming-dependent counties. These areas had a higher percentage of households with negative net cash household incomes than farming-dependent areas. However, this income measure excludes noncash farm income, which is more important to farm operator households in not-farming-dependent counties.

Over half of the land farmed in 1986 was in not-farming-dependent areas, while the average farm size (503 acres) was the smallest of the three county types (table 3). Although farms in not-farming-dependent counties were generally smaller, their average asset value was somewhat higher than in farming-important areas because of their higher per acre value of land and buildings. Land and buildings constituted 70 percent of total assets, the highest share of assets of the three county types.

Almost half of all the farms in the not-farming-dependent counties did not have any debt. The debt/asset ratio for 7 percent of farms in these areas was at least 0.70. Farm debt in not-farming-dependent counties averaged $47,897. The average net worth of farms in these counties was also higher than that of farms in farming-important areas, but less than that of farms in farming-dependent counties.

An Overall Measure of Economic Position

Our measure of economic position synthesizes the measures of financial performance that vary among county types (see box). Our measure is based on the net cash household income from farm and off-farm sources, the debt/asset ratio of the farm business, the estimated income needed to meet farm business principal payments on debt *(7)*, and minimum household requirements for income.[1] We used the U.S. Department of Commerce's official poverty line as the measure of the minimum cash living requirements of households *(5)*. (The poverty line varies by family size.) Noncash income items are excluded from this poverty measure, and our economic position classification is based solely on the cash income of the farm operator household. The measure of minimum cash necessary to cover living expenses should not be interpreted as what households actually spent or what "average" farm-operator households spend on living expenses.

If it has assets (savings) to draw from, a farm household could continue to farm in any 1 year even if current income did not cover living expenses and farm financial obligations. Because farming is a risky business, it is common for farm households to save and dissave over time by acquiring or paying-off debt. But if low incomes persist over several years or if asset values decline as they have in the 1980's, then the deteriorating financial conditions can deplete equity savings, leading to higher debt/asset ratios. This puts the household at a greater economic risk.

About 60 percent of all U.S. farm households were in a secure economic position and 20 percent were classified as low income in 1986. Another 20 percent were

[1] Italicized numbers in parentheses identify sources listed in the References section.

Economic Position

Our measure of economic position does not require us to make value judgments about what living expenses should be or assumptions about what living expenses are in the absence of data. Our categories of financial position include the following:

Secure position. Farms are financially secure when their farm debt/asset ratio is less than 0.40 and total cash household income meets or exceeds the sum of estimated principal payments on farm debt and the household's minimum cash income requirement.

Low-income position. Farms are considered low income when their farm debt/asset ratio is less than 0.40 and total cash household income is less than the combination of estimated principal payments on farm debt and the household's minimum cash income requirement.

Potential financial risk. Farms are potentially at financial risk when their farm debt/asset ratio is between 0.40 and 0.69, regardless of total household income. Farms are also at potential financial risk when their farm debt/asset ratio is between 0.70 to 0.99 and their total cash household income equals or exceeds the combination of estimated principal payments on farm debt and the household's minimum cash income requirement.

Financial risk. Farms are at financial risk when their farm debt/asset ratio is between 0.70 to 0.99 and their total household cash income is less than estimated principal payments on farm debt and the household's minimum cash income requirement. Farms are also considered at financial risk when their debt/asset ratio is greater than or equal to 1.00, regardless of their total household cash income.

There is no one correct way to classify farms by their financial position. The optimal debt level will vary by farm operator household and will depend on interest rates and the household's objectives, resources, and expectations of the future. While other schemes for classifying farms by financial position are similar to the definitions used in this report, the other schemes are not directly comparable *(7)*.

Our scheme excludes CCC loans from debt, bases the family living expense on the established poverty threshold (instead of the nonmetro median cash income adjusted for housing), and combines farm debt/asset and income positions differently to categorize households into economic position categories. Our measure is generally more conservative in classifying farms into the most unfavorable category. For example, two common schemes identified 10 percent *(7)* and 16 percent *(3)* of U.S. farms in the worst category in 1986, whereas only 6 percent are identified under the measure used in this report.

Economic position of farm operator households

Income sufficiency level[1]	Farm debt/asset ratio			
	Less than 0.40	0.40 to 0.69	0.70 to 0.99	1.00 or more
Below minimum	Low income	Potential financial risk	Financial risk	Financial risk
Meets or exceeds	Secure	Potential financial risk	Financial risk	Financial risk

[1]Defined as whether the household's total household income (net cash farm income plus off-farm income) exceeds the sum of principal payments on farm debt and the household's poverty threshold.

in financial risk (6 percent) or potential financial risk (14 percent). The incidence of financial risk was higher in counties that were more dependent on farming as a major economic activity (fig. 2). About 27 percent of all farm operator households living in farming-dependent counties experienced some financial risk, compared with 17 percent of farm operator households living in not-farming-dependent counties. However, the incidence of low incomes alone was lower in farming-dependent counties than in farming-important and not-farming-dependent areas. These relationships are consistent with what we know about economic risk positions by farm size and the size distribution of farms by county type. However, not-farming-dependent areas had the lowest incidence of economic risk at every size level.

Regional Similarities and Differences

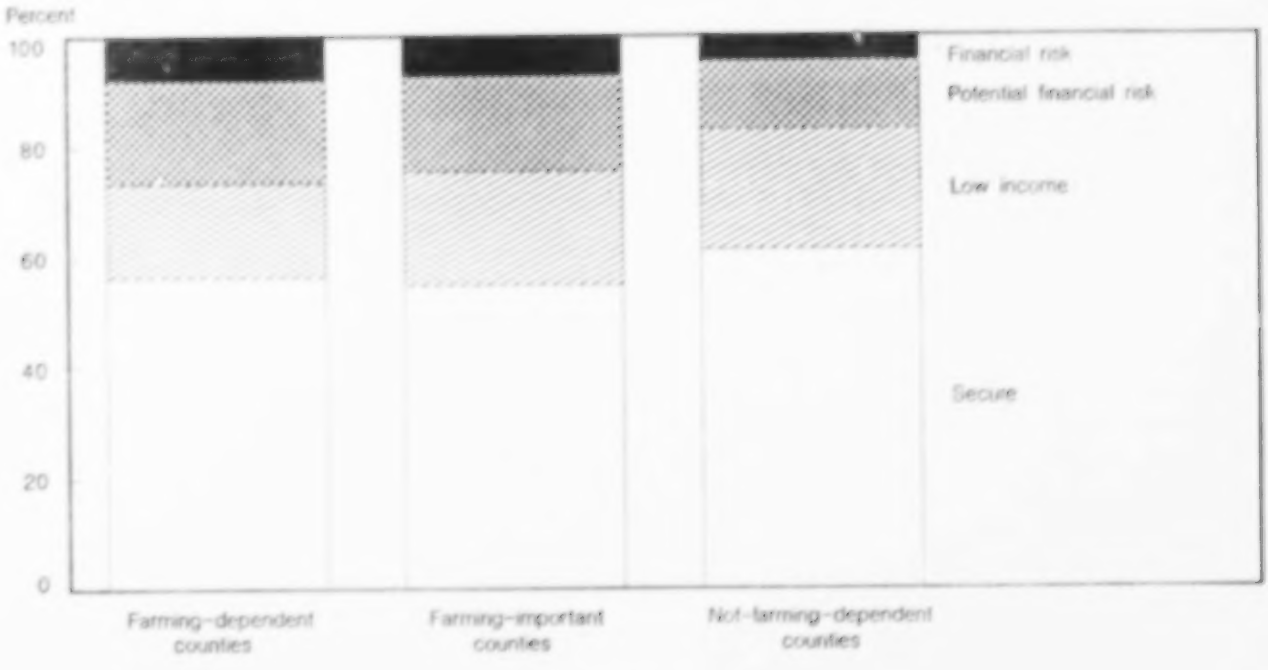
Previous analysis has shown that regional differences exist in the relationships between farm financial conditions and local area characteristics (*1*). The FCRS sample size limits our discussion to three broad regions in the continental United States: the Midwest, South, and West.[2] We were unable to examine the characteristics by county type in the Northeast because of too few observations. We chose not to combine the Northeast with the other major regions because of its many unique characteristics (for example, it has only one farming-dependent county).

Regional Similarities

Several trends by county type which existed at the national level were also true within each region. Average population was lowest in farming-dependent counties and highest in not-farming-dependent counties. Not-farming-dependent counties contained most metro counties in each region. The proportion of land area in farms was consistently highest in farming-dependent counties and lowest in not-farming-dependent counties. Per capita income was lowest in the farming-important counties of each region for every year. By definition, the importance of farm earnings relative to total earnings was greatest in farming-dependent counties and lowest in not-farming-dependent counties. County earnings from agricultural servi[illegible] were

[2]The Midwest includes Ohio, Illinois, Indiana, Iowa, Missouri, Michigan, Wisconsin, Minnesota, North Dakota, South Dakota, Kansas, and Nebraska. The South includes Alabama, Georgia, Florida, Kentucky, Maryland, Arkansas, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. The West includes California, Oregon, Washington, Arizona, Nevada, New Mexico, Utah, Idaho, Colorado, Wyoming, and Montana.

Figure 2
Farm operator households: Economic position by county type in 1986



also least important in not-farming-dependent counties. Earnings from construction and manufacturing were less important in farming-dependent counties than in farming-important counties and more important in not-farming-dependent counties. But the overall importance of the goods-producing sector relative to total earnings declined across the county types as the dependence on farming decreased. In contrast, the portion of total earnings from the service sector increased as the dependence on farming declined.

Farm trends across county types were similar among regions in several respects. Average farm income was lowest in not-farming-dependent areas, and the average off-farm income of farm operator households was lowest in farming-dependent areas. Average farm debt was lowest in not-farming-dependent areas, and average net worth was highest in farming-dependent areas.

Farms with gross sales of up to $100,000 constituted a larger proportion of the farms in not-farming-dependent areas than elsewhere. The highest proportion of every region's cash grain and cotton farms was in the farming-dependent areas. The highest proportion of all other crop specialty farms was in not-farming-dependent areas in every region. Not-farming-dependent areas also had the highest proportion of operators whose major occupation was not farming.

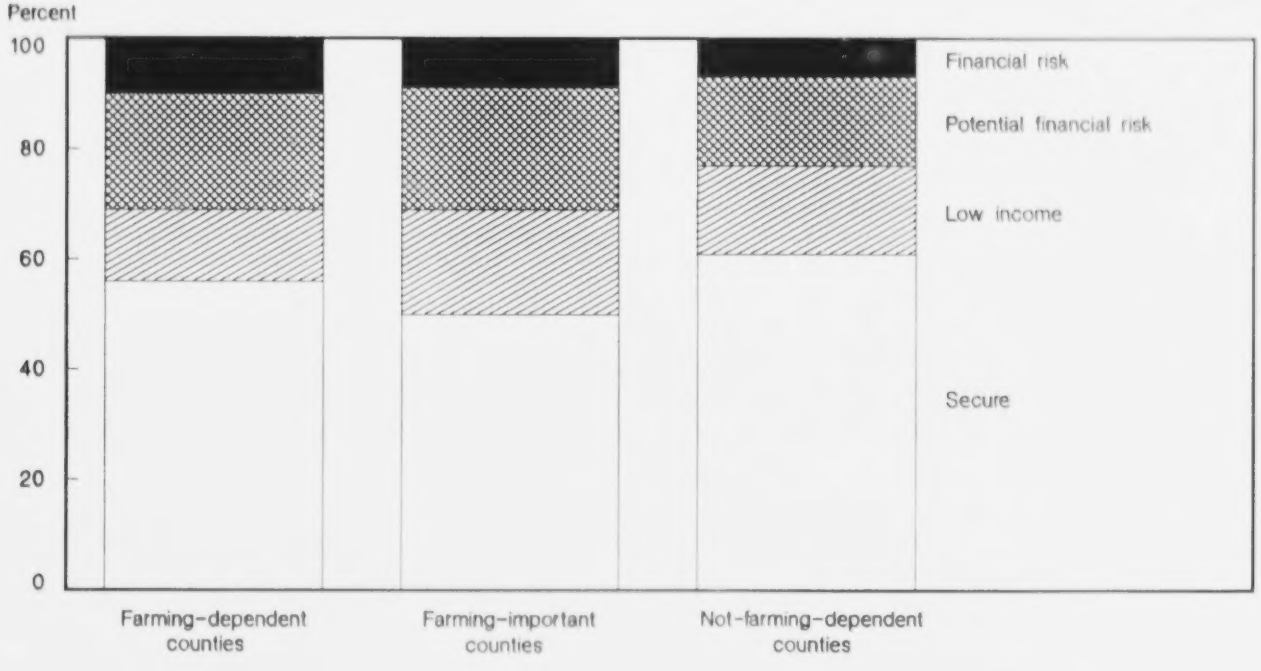
Regional Differences

The national trends in characteristics of areas and their farms by county types masked some regional differences.

The Midwest

The Midwest had more farming-dependent and farming-important counties than any other region. Twenty-five percent of all Midwest counties were classified as farming-dependent; they represented half of all such counties in the United States. Farming-dependent counties in the Midwest were concentrated in the western half of the region, an area generally sparsely populated with few major urban areas for employment opportunities. Twenty-two percent of all Midwest counties were farm-

Figure 3
Farm operator households in the Midwest: Economic position in 1986



ing-important; this region had over 40 percent of such counties in the United States. Midwest farming-important counties were located around farming-dependent counties. These counties almost serve as a transition zone between the farming-dependent counties and the not-farming-dependent counties concentrated in the industrial belt surrounding the Great Lakes.

The average farm asset value and net worth of midwestern farms were generally lower than in other regions, but their farm incomes were higher than in the South. Cash grain specialties were more common in this region than in other regions; less than 10 percent of farms specialized in other crop production. Grain production was more common in this region's farm economy, so Federal commodity programs bolstered the region's farm income. More farm operators cited farming as their major occupation, which is consistent with their lower average off-farm income.

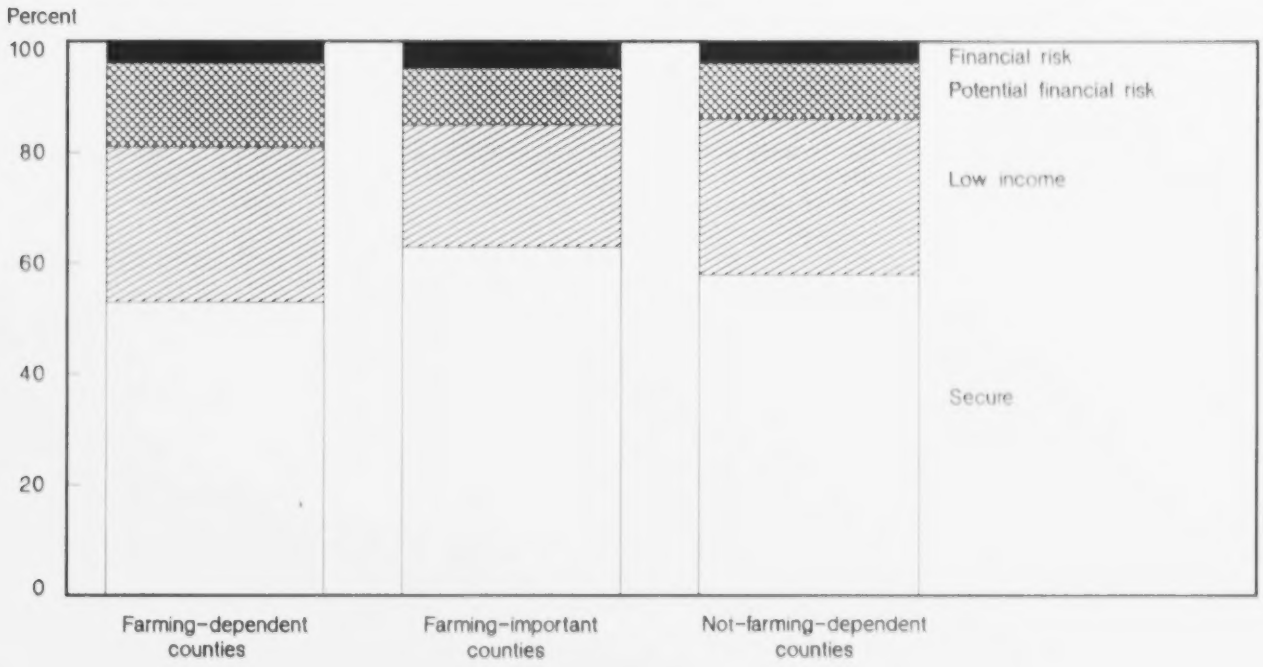
Midwestern farms in each county type experienced more potential financial risk and financial risk in 1986 than did farms in other regions. Farmers in the Midwest's not-farming-dependent counties reported less financial risk than did farmers in the other two county types. Nearly a third of midwestern farms in the farming-dependent and farming-important counties were in a risky financial position in 1986, compared with less than a quarter in not-farming-dependent counties (fig. 3). Nearly 20 percent of farms in farming-important areas experienced low incomes, despite their having the highest off-farm income in the region. Low incomes were more prevalent in not-farming-dependent counties than in farming-dependent counties.

The South

Only 11 percent of the counties in the South were farming-dependent. These counties were also less concentrated than in the Midwest.

One cluster of farming-dependent counties was located in the Plains areas of Texas and Oklahoma and represented the southern extension of the Midwest's farming-dependent counties. A second cluster was located

Figure 4
Farm operator households in the South: Economic position in 1986



in Arkansas, and represented both crop farming in the Mississippi Delta and livestock/poultry production in the Ozark-Ouachita Mountains. A third cluster of farming-dependent counties was located in the interior uplands area of Kentucky, an area traditionally dominated by smaller farms. Three additional clusters of farming-dependent counties were located in the Southeast: one in the Coastal Plains area of Georgia, Alabama, and the Florida Panhandle, a second in eastern North Carolina, and a third in the citrus belt of south central Florida.

Twenty-four percent of the region's counties were farming-important. Some of these counties are extensions of farming-dependent areas. Others are counties left behind by the nonfarm population and employment growth that occurred elsewhere in the South during the late 1960's and early 1970's.

Per capita income in the South's farming-dependent and farming-important counties was lower than in similar Midwest counties. The South also had more manufacturing employment opportunities than in the Midwest.

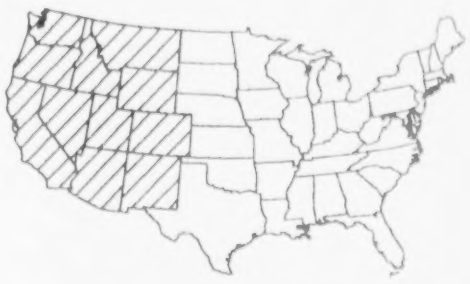
About a third of U.S. farms represented in the FCRS were in the South. Southern farms were more likely than any other region to be located in not-farming-dependent counties. The South also had a higher percentage of small farms and farms operated by older operators.

Although the average asset value of southern farms was slightly higher than in the Midwest, average net cash farm income was much lower in the South. Farms in the South generally had lower financial risk and more low incomes in 1986 than did the Midwest (fig. 4). This was true in both farming-dependent and not-farming-dependent counties. As in the Midwest, financial risk in the South was highest in farming-dependent counties. Low incomes also were not associated with county type. The higher incidence of low incomes in the South reflects the greater proportion of small farms in the South; small farms are less likely to operate at a profit in any given year. The incomes also reflect the severe drought conditions in many parts of the South in 1986.

Farming-dependent counties in the South had the highest incidence of low incomes among all farming-dependent counties, particularly among cash grain and cotton producers.

Farmers in farming-important counties in the South were in a relatively favorable position, compared with other southern areas and farming-important areas in other regions. Farms in farming-important areas in other regions had the highest incidence of economic risk among the county types. Over 60 percent of the farms in the South's farming-important areas were financially secure in 1986. Farms there also had higher off-farm incomes, on average, and their operators were less likely to cite farming as their major occupation than were similar farms elsewhere. Southern farming-important counties were smaller, more dispersed, and more likely to be near larger employment centers than were similar counties in other regions.

The West

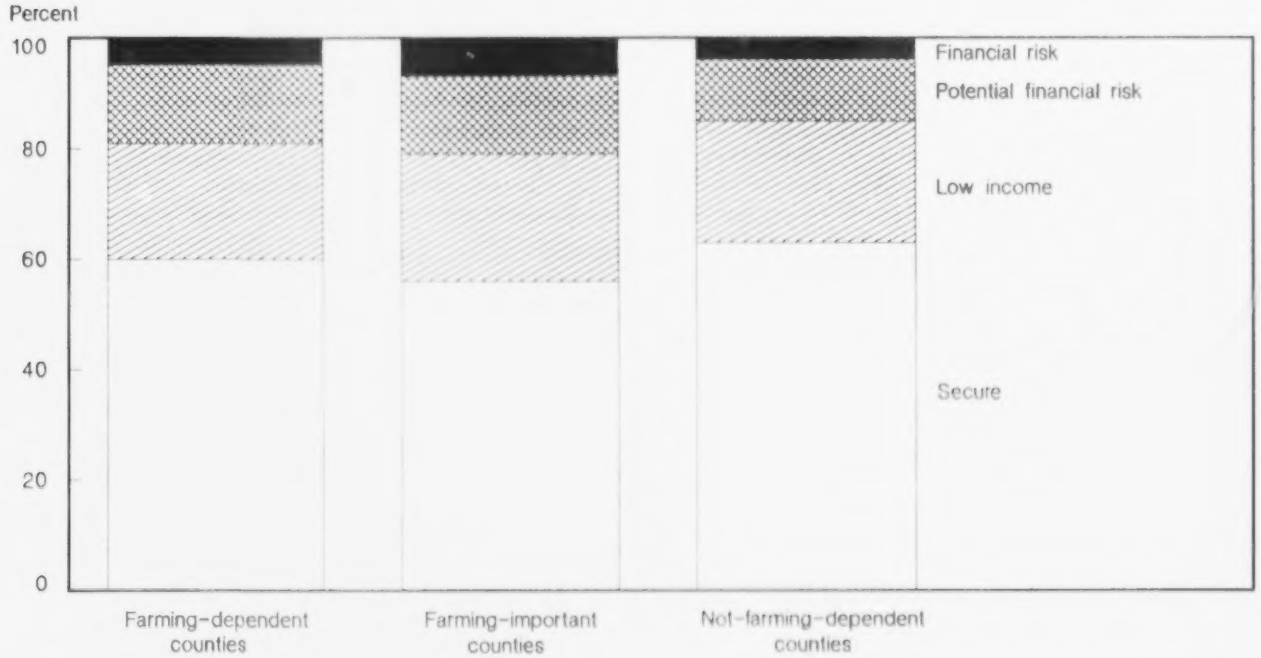


About 30 percent of the counties in the West were farming-dependent. These areas in the West were among the most geographically isolated of all farming-dependent areas. Farming-dependent counties in eastern Montana, Colorado, and New Mexico reflect westward extensions of Plains agriculture from the Midwest and South. Farming-important counties, 25 percent of the region's counties, are largely adjacent to farming-dependent counties. Farming-dependent and farming-important counties are concentrated in the Northwest (Washington, Oregon, and Idaho), east of the Cascades. Farming-important counties in California reflect the presence of the high-production, large-farm irrigated agriculture in the Central Valley areas of the State.

Farms in the West had high asset values, high net worths, and high per farm cash income. Net cash farm income reported by households in the West's farming-important and not-farming-dependent counties were the highest among all regions. The West also had the highest off-farm income per operator household in 1986, especially for farm households in not-farming-dependent areas, reflecting the influence of higher nonfarm incomes in California. The West had the largest share of farms specializing in livestock production.

Financial risk was lower in the West than in the Midwest but was comparable with the South (fig. 5). Finan-

Figure 5
Farm operator households in the West: Economic position in 1986



cial risk was lower in not-farming-dependent counties than in the other counties in this region. Low incomes were also not associated with county types in the West.

Conclusions and Implications

Many farm operator households experienced economic stress during the 1980's. But farming-dependent counties continued to have higher per capita incomes in the 1980's than did other areas, partly because the 1980's stress in agriculture was due more to declining asset values than to low incomes. However, household incomes in counties whose economic base depends on farming likely were lower than they would have been had the period been less stressful for agriculture.

Farm financial conditions have begun to stabilize in recent months, due largely to substantial Federal support. Land prices are beginning to stabilize, farm sector income has continued to grow, and returns to the sector's equity (including capital gains) have become positive again *(6)*. This suggests that the incidence of financial risk, particularly in farming-dependent counties, should begin to lessen. Continued recovery this year could be slowed, depending on the severity of the drought in these areas.

There are important relationships between the well-being of farm operator households and the characteristics of their counties. These relationships can be observed through the farm household income statement and the farm balance sheet. The more a county's economy depends on farming, the larger the average size farm and the less likely the operator will work off the farm.

There are fewer alternative opportunities for a farm operator household's labor in farming-dependent counties, so there are incentives for households to expand their farms to achieve fuller employment and higher income. Although there are differences in the allocation of farm household labor among the county types, the incidence of all types of economic risk (financial risk, potential financial risk, and low income) did not differ significantly among the counties.

But type of economic risk differs substantially among the county types. Farm operator households are more likely to be financially at risk, as opposed to a low-income position, when their county's economy depends on farming. This suggest that community characteristics can affect a farm household's economic well-being through the balance sheet. Even though farmers, as a group, reduced their total debt burden during the 1980's, debt reduction did not keep pace with falling

land prices. Thus, the sector's equity position deteriorated. Farmland owners in farming-dependent counties bore the brunt of asset value declines. The more a community relies on farming for economic activity, the more the community's land values are influenced by the returns to farming rather than by nonfarm business, residential, or recreation uses.

Farms in farming-dependent counties specialize in producing crops included in Federal farm commodity programs. Sixteen percent of the farms and 23 percent of agricultural sales were in farming-dependent areas, but they received 33 percent of direct Government payments in 1986. Farmers in these areas were also likely to be major beneficiaries of price supports under U.S. commodity programs. Farm commodity programs are, therefore, an important source of income to these areas. Government farm programs helped lessen economic stress in farming-dependent areas. Without Government programs, economic stress would have been higher in these areas during the mid-1980's.

Policymakers are debating future Federal farm policy. Most options under consideration involve decreasing the total direct payments to producers and targeting payments. If payments are decreased across the board or are targeted to farm operator households with low incomes, fewer total payments will flow into farming-dependent areas than if payments are targeted to midsized farms ($40,000 to $250,000 in sales). With major reductions in direct payments, particularly in the absence of trade liberalization, agricultural land values in farming-dependent areas will likely decline again as expectations about future returns are adjusted. Because the outcomes of the debates on agricultural policy, the Government's role in rural development, and international agricultural trade liberalization are unknown, it is impossible to know the rate of adjustment in farming-dependent counties. However, the general direction of change is clear: many farming-dependent counties must diversify their economic base into nonfarm alternatives if they are to stay viable.

Farming-important counties are already more diversified into nonfarm alternatives. But, the same trends in the farm sector will also cause farming-important counties to face adjustments in their local economies.

Not-farming-dependent areas produce half the agricultural commodities in the United States. However, that production is considerably smaller than their nonfarm activities, so agricultural policy hardly affects their economies. One agricultural policy option under review would target direct payments to farm operator households with low incomes. If this option is implemented, not-farming-dependent areas stand to gain relative to farming-dependent areas because not-farming-dependent areas contain more than 60 percent of U.S. farms and a higher incidence of low-income farm operator households. Such a redirection in policy would significantly shift the distribution of agricultural program benefits, especially from the Midwest to the South.

References

(1) Ahearn, Mary, and Thomas Carlin. "The Relationships Between Farm Stress and Local Community Characteristics," Paper presented at the Southern Agricultural Economics Association Meeting, Nashville, TN, Feb. 1-4, 1987.

(2) Bender, Lloyd D., and others. *The Diverse Social and Economic Structure of Nonmetropolitan America*, RDRR-49. U.S. Dept. Agr., Econ. Res. Serv., Sept. 1985.

(3) Hanson, Gregory. *Potential Loan Losses of Farmers and Lenders*, AIB-530. U.S. Dept. Agr., Econ. Res. Serv., Sept. 1987.

(4) Hoppe, Robert A. *Sharply Fewer Counties Depend on Farming*, ESS-11. U.S. Dept. Agr., Econ. Res. Serv., July 1981.

(5) U.S. Department of Commerce, Bureau of the Census. "Money Income and Poverty Status of Families and Person's in the United States: 1985," *Current Population Reports*, Series P-60, No. 154 (advance data from the March 1986 Current Population Survey), 1986.

(6) U.S. Department of Agriculture, Economic Research Service. *Economic Indicators of the Farm Sector: Farm Sector Review*, ECIFS 6-3. Jan. 1988.

(7) _____. *Financial Characteristics of U.S. Farms, January 1, 1987*, AIB-525. Aug. 1987.

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